Twelfth Census of the United States.

CENSUS BULLETIN.

No. 196. WASHINGTON, D. C. June 18, 1902.

AGRICULTURE.

OREGON.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I have the honor to transmit herewith, for publication in bulletin form, the statistics of agriculture in the state of Oregon, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that—

> The schedules relating to agriculture shall comprehend the following topics: Name of occupant of each farm, color of occupant, tenure, acreage, value of farm and improvements, acreage of different products, quantity and value of products, and number and value of live stock. All questions as to quantity and value of crops shall relate to the year ending December thirty-first next preceding the enumeration.

A "farm," as defined by the Twelfth Census, includes all the land, under one management, used for raising crops and pasturing live stock, with the wood lots, swamps, meadows, etc., connected therewith. It includes also the house in which the farmer resides and all other buildings used by him in connection with his farming operations.

The farms of Oregon, June 1, 1900, numbered 35,837, and were valued at $132,337,514. Of this amount $19,199,694, or 14.5 per cent, represents the value of buildings, and $113,137,820, or 85.5 per cent, the value of the land and improvements other than buildings. On the same date the value of farm implements and machinery was $6,506,725, and of live stock, $33,917,048. These values, added to that of farms, give $172,761,287, the "total value of farm property."

The products derived from domestic animals, poultry, and bees, including animals sold and animals slaughtered on farms, are referred to in this bulletin as "animal products." The total value of all such products, together with the value of all crops, is termed "total value of farm products." This value for 1899 was $38,090,969, of which $16,284,282, or 42.8 per cent, represents the value of animal products, and $21,806,687, or 57.2 per cent, the value of crops, including forest products cut or produced on farms. The total value of farm products for 1899 exceeds that for 1889 by $19,064,849, or 100.2 per cent. A portion of this increase is doubtless due to a more detailed enumeration in 1900 than in 1890.

The "gross farm income" is obtained by deducting from the total value of farm products the value of the products fed to live stock on the farms of the producers. In 1899 the reported value of products fed was $6,194,721, leaving $31,896,248, as the gross farm income. The ratio which this amount bears to the "total value of farm property" is referred to in this bulletin as the "percentage of gross income upon investment." For Oregon in 1899 it was 18.5 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

Special reports as to the dimensions and cost of the leading irrigation ditches and canals, the area of land under them, methods for the artificial application of water to the growing crops, and other facts relating to irrigation, were obtained by correspondence with farmers, engineers, and others. This correspondence was under the joint direction of Mr. F. H. Newell, chief hydrographer of the Geological Survey, acting as expert special agent for the division of agriculture, and Mr. Clarence J. Blanchard.

The statistics presented in this bulletin will be treated in greater detail in the report on agriculture in the United States. The present publication is designed to present a summarized advance statement for Oregon.

Very respectfully,

L. G. Powers.

Chief Statistician for Agriculture.

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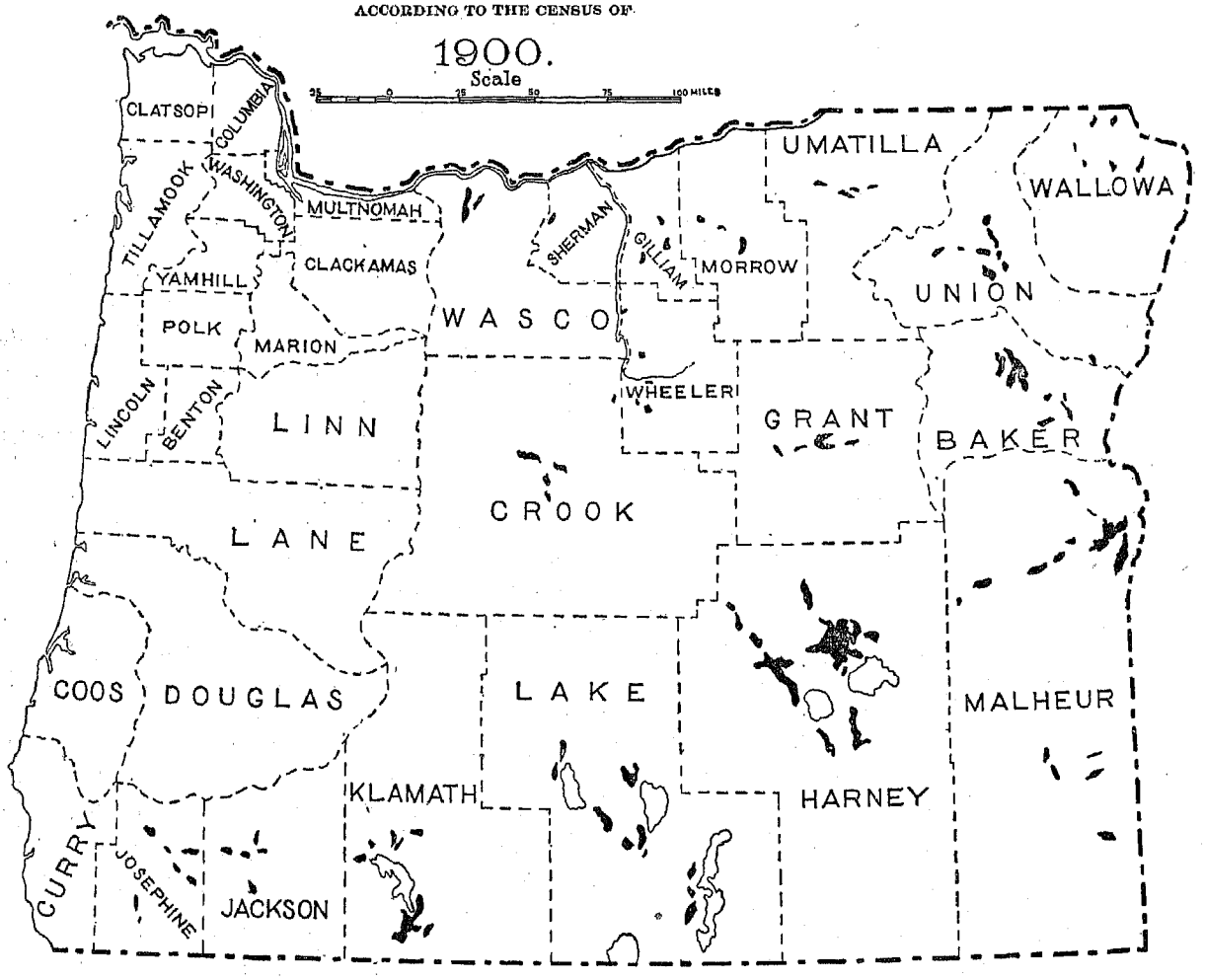
SKETCH MAP
OF
OREGON
SHOWING THE
IRRIGATED AREAS
ACCORDING TO THE CENSUS OF
1900.

Total Irrigated Area

387,095 Acres



AGRICULTURE IN OREGON.

GENERAL STATISTICS.

Oregon has a total land area of 94,560 square miles, or 60,518,400 acres, of which 10,071,328 acres, or 16.6 per cent, are included in farms.

The Cascade Mountains, extending north and south, divide the state into "Eastern Oregon" and "Western Oregon." The former contains about two-thirds of the total area of the state, but the latter includes the greater part of the agricultural lands now in use. With irrigation, however, the farm area of the eastern section might be increased tenfold.

In the valleys of the western part, notably those of the Willamette, Umpqua, and Rogue rivers, the soil is a rich, dark loam. The hills have a heavier soil and the mountains are suitable only for grazing. In the eastern part, the soil is sandy in general, and contains much alkali, but is very fertile under irrigation. In the northeast, extensive areas of naturally fertile wheat lands are found; in the southeast, the cultivation of crops is of very little importance, but the land is extensively used for grazing purposes.

NUMBER AND SIZE OF FARMS.

The following table gives, by decades since 1850, the number of farms, the total and average acreage, and the per cent of farm land improved.

TABLE 1.—FARMS AND FARM ACREAGE: 1850 TO 1900.

YEAR.	Number of farms.	NUMBER OF ACRES IN FARMS.				Per cent of farm land improved.
		Total.	Improved.	Unimproved.	Average.	
1900	35,837	10,071,328	3,328,308	6,743,020	281.0	33.0
1890	25,530	6,909,888	3,516,000	3,393,888	270.7	50.9
1880	16,217	4,214,712	2,198,645	2,016,067	259.9	52.2
1870	7,587	2,389,252	1,116,290	1,272,962	314.9	46.7
1860	5,806	2,060,539	896,414	1,164,125	354.9	43.5
1850	1,164	432,808	132,857	299,951	371.8	30.7

The total number of farms in Oregon in 1900 was over thirty times as great as in 1850, and 40.4 per cent greater than in 1890. The total acreage has also increased rapidly, being over twenty-three times as great as in 1850. The gain in the last ten years was 45.8 per cent. With the exception of the last decade, the area of improved land has increased steadily, and, until 1880, at a more rapid rate than the total acreage. The decrease in the acreage and per cent of farm land improved shown for the last decade, is due to a more strict construction of the term "improved" by the Twelfth than by any preceding census. The increased areas devoted to the various crops show that there has been no decrease in the actual area under cultivation.

Between 1850 and 1880, the number of farms increased faster than the total acreage, involving a decrease in the average size of farms, and indicating a progressive division of farm holdings and a more complete utilization of the soil. The slight increases shown for the last two decades are due to the large additions made to ranges in the eastern part of the state, which recently have been taken from the public domain, and, for the first time, enumerated as farm land. The decrease continued through the last two decades in the western counties and in some of the older-settled counties of the eastern section.

FARM PROPERTY AND PRODUCTS.

Table 2 presents a summary of the principal statistics relating to farm property and products for each census year, beginning with 1850.

TABLE 2.—VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF FARM PRODUCTS: 1850 TO 1900.

YEAR.	Total value of farm property.	Land, improvements, and buildings.	Implements and machinery.	Live stock.	Farm products.[1]
1900	$172,761,287	$132,337,514	$6,506,725	$33,917,048	$38,090,969
1890	143,024,800	115,819,200	4,556,770	22,648,830	19,026,120
1880	73,673,140	56,908,575	2,956,173	13,808,392	13,234,548
1870[2]	30,475,381	22,352,989	1,293,717	6,828,675	[3]7,122,790
1860	22,099,161	15,200,593	952,313	5,946,255	----------
1850	4,908,782	2,849,170	183,423	1,876,189	----------

[1] For year preceding that designated.
[2] Values for 1870 were reported in depreciated currency. To reduce to specie basis of other years they must be diminished one-fifth.
[3] Includes betterments and additions to live stock.

The above table shows a remarkable increase in the value of every form of farm property during the five decades from 1850 to 1900. In the last decade, the gain in the total value of farm property was $29,736,487, or 20.8 per cent. The increase in the value of land, improvements, and buildings was $16,518,314, or 14.3 per cent; in that of implements and machinery, $1,949,955, or 42.8 per cent; and in that of live stock, $11,268,218, or 49.8 per cent. The value of farm products shown for 1900 is 100.2 per cent greater than that reported for 1889, but a portion of this increase is doubtless due to a more detailed enumeration in 1900 than in previous census years.

COUNTY STATISTICS.

Table 3 gives a statement of general agricultural statistics by counties.

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.					EXPENDITURES.	
	Total.	With buildings.	Total.	Improved.	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.	Value of products not fed to live stock.	Labor.	Fertilizers.
The State	35,837	34,976	10,071,328	3,328,308	$113,137,820	$19,199,694	$6,506,725	$33,917,048	$31,896,248	$4,842,834	$27,395
Baker	725	700	176,455	78,389	2,190,425	407,865	146,895	1,400,712	945,562	159,510	1,080
Benton	865	849	235,652	85,823	3,381,460	349,480	165,980	651,091	766,417	62,550	290
Clackamas	2,568	2,530	298,491	90,061	6,664,350	1,303,620	337,630	945,879	1,437,403	190,650	1,050
Clatsop	433	427	72,515	14,094	1,559,170	297,610	109,460	211,866	211,340	33,920	150
Columbia	801	792	142,906	18,045	1,465,660	411,290	76,880	333,719	478,210	60,090	390
Coos	868	854	172,336	37,622	2,117,570	412,080	102,050	562,119	604,954	43,250	40
Crook	576	557	783,485	55,734	2,846,440	393,680	117,600	1,642,391	932,559	125,220	----------
Curry	290	280	103,236	23,149	999,300	140,410	36,010	286,908	210,884	20,050	40
Douglas	1,641	1,624	553,168	122,997	4,764,020	876,980	255,180	1,178,548	1,204,729	109,250	2,010
Gilliam	441	437	340,460	186,258	1,438,470	237,120	153,910	848,388	605,011	123,370	200
Grant	697	664	316,346	41,222	1,220,870	265,980	110,180	1,410,780	912,086	116,630	150
Harney	348	319	272,877	125,549	1,457,920	262,690	77,340	1,980,777	627,909	143,550	20
Jackson	1,356	1,334	294,163	92,103	3,614,660	698,810	219,880	788,886	1,050,289	116,350	1,880
Josephine	557	550	96,019	22,189	958,200	248,950	70,170	243,719	339,846	36,980	510
Klamath	453	447	221,554	72,239	807,780	241,130	98,690	845,208	484,467	63,830	----------
Lake	397	363	249,288	95,824	1,824,840	232,940	92,840	1,766,154	823,050	143,230	----------
Lane	2,370	2,326	503,405	140,518	5,815,290	1,089,180	342,770	1,226,567	1,493,811	149,050	305
Lincoln	489	487	89,665	8,823	546,910	127,290	24,600	188,878	156,438	5,780	40
Linn	2,417	2,359	491,489	216,582	7,516,860	1,369,250	484,350	1,437,580	1,753,243	163,370	620
Malheur	583	538	221,043	91,250	2,142,850	277,360	139,720	2,837,567	862,170	210,914	70
Marion	2,754	2,698	396,091	199,254	10,186,780	1,472,440	417,250	1,312,620	2,299,055	463,610	1,050
Morrow	586	542	509,958	144,457	1,982,331	276,300	146,980	1,318,798	904,458	196,000	620
Multnomah	1,276	1,249	102,926	34,196	6,642,490	1,022,720	200,600	557,015	1,095,209	159,100	5,130
Polk	1,192	1,168	256,847	127,072	4,977,240	808,310	250,220	741,983	1,165,492	206,020	4,570
Sherman	545	527	302,482	198,285	2,458,750	348,110	253,020	531,160	680,564	195,650	380
Tillamook	631	626	101,912	26,940	1,339,680	299,490	76,640	377,952	393,337	35,180	100
Umatilla	1,593	1,545	703,852	382,763	9,301,870	1,110,840	552,320	1,919,897	2,536,755	473,150	280
Union	1,481	1,431	391,299	162,495	5,884,100	863,870	367,980	1,471,557	1,513,469	225,460	400
Wallowa	803	789	193,255	55,181	1,283,305	308,060	121,160	1,062,831	674,175	59,440	70
Wasco	1,851	1,808	431,600	115,059	3,019,650	712,190	248,420	1,123,282	1,077,102	233,570	2,100
Washington	2,302	2,277	251,568	92,512	4,993,820	989,010	293,010	836,582	1,468,001	173,340	1,590
Wheeler	390	381	280,754	22,056	993,506	180,974	66,090	847,178	558,058	86,320	580
Yamhill	1,595	1,575	284,385	134,332	5,989,550	1,069,720	318,670	840,607	1,423,458	196,520	1,700
Grande Ronde[1]	104	99	23,774	3,845	117,960	14,310	5,800	15,915	20,496	----------	----------
Klamath[1]	213	182	165,166	31,391	360,110	26,165	25,620	122,137	30,814	2,380	----------
Siletz[1]	49	47	5,660	1,499	50,383	24,020	7,440	18,929	10,576	890	----------
Umatilla[1]	65	60	26,880	25,360	674,890	21,900	38,790	59,767	138,918	58,660	----------
Warm Springs[1]	87	35	8,466	1,645	48,360	7,600	4,680	21,106	10,983	----------	----------

[1] Indian reservation.

Aside from those counties which have undergone territorial changes, only Harney and Morrow report decreases since 1890 in the total number of farms. Harney alone shows a decrease in the total farm area, all others reporting substantial gains. The decreased improved acreage reported for a number of counties is due to a more intensive cultivation of smaller areas of farm land and a more strict construction of the term "improved" by the Twelfth than by any preceding census. The central counties, which are chiefly devoted to stock raising, contain the largest farms, while the smallest farms are in the western counties, and devoted to general agriculture, dairying, fruit growing, and market gardening. The average size of farms for the state is 281.0 acres, varying from 80.7 acres in Multnomah county to 1,360.2 acres in Crook county.

For the state, the average value of farms is $3,693. In over two-thirds of the counties the total value of farms has increased since 1890, the decreases reported in the remaining counties being slight. Marked gains are shown in the value of implements and machinery, the average value per farm in 1900 being $182. All counties, except Yamhill, report higher values for live stock, the state average being $946 per farm.

The average expenditure in the state for labor in 1899 was $135 per farm, but varied greatly in different sections, the average amount expended in all the eastern counties, except Wallowa, being much larger than elsewhere. The total expenditure for fertilizers in 1899 was greater than in 1889, but still averaged less than $1 per farm. The majority of counties show increases in the use of commercial fertilizers.

FARM TENURE.

Table 4 gives a comparative statement of farm tenure for 1880, 1890, and 1900. Tenants are divided into two groups: "Cash tenants," who pay a rental in cash or a stated amount of labor or farm produce, and "share tenants," who pay as rental a stated share of the produce.

In Table 5 the tenure of farms in 1900 is given by race of farmer, and "farms operated by owners" are subdivided into groups, designated as farms operated by "owners," "part owners," "owners and tenants," and "managers." These groups comprise, respectively: (1) Farms operated by individuals who own all the land they cultivate;

(2) farms operated by individuals who own a part of the land and rent the remainder from others; (3) farms operated under the joint direction and by the united labor of two or more individuals, one owning the farm or a part of it, and the other, or others, owning no part, but receiving for supervision or labor a share of the products; and (4) farms operated by individuals who receive for their supervision and other services a fixed salary from the owners.

TABLE 4.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES: 1880 TO 1900.

YEAR.	Total number of farms.	NUMBER OF FARMS OPERATED BY—			PER CENT OF FARMS OPERATED BY—		
		Owners.[1]	Cash tenants.	Share tenants.	Owners.[1]	Cash tenants.	Share tenants.
1900	35,837	29,471	2,637	3,729	82.2	7.4	10.4
1890	25,530	22,324	1,083	2,123	87.5	4.2	8.3
1880	16,217	13,938	741	1,538	85.9	4.6	9.5

[1] Including "part owners," "owners and tenants," and "managers."

TABLE 5.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER.

PART 1.—NUMBER OF FARMS OF SPECIFIED TENURES.

RACE.	Total number of farms.	Owners.	Part owners.	Owners and tenants.	Managers.	Cash tenants.	Share tenants.
The State	35,837	24,385	4,251	327	508	2,637	3,729
White	35,286	24,179	4,013	321	502	2,579	3,689
Colored	551	206	238	3	6	58	40
Chinese	93	3	----	----	1	55	34
Indian	445	195	236	2	5	3	4
Negro	13	8	2	1	----	----	2

PART 2.—PER CENT OF FARMS OF SPECIFIED TENURES.

The State	100.0	68.0	11.9	0.9	1.4	7.4	10.4
White	100.0	68.5	11.4	0.9	1.4	7.3	10.5
Colored	100.0	37.4	43.2	0.5	1.1	10.5	7.3

In the period from 1880 to 1900, the total number of farms increased 121.0 per cent, the greater part of the increase having occurred in the last decade. The number of farms operated by owners has increased 7,147, or 32.0 per cent, since 1890; by cash tenants, 1,554, or 143.5 per cent; and by share tenants, 1,606, or 75.6 per cent. The percentages in Table 4 show that the number of farms operated by owners has not increased so rapidly during the last decade as the number operated by tenants.

In 1900, 98.5 per cent of all farms were operated by white farmers, and 1.5 per cent by colored farmers. Of the white farmers, 80.8 per cent own all or a part of the farms they operate, and 19.2 per cent operate farms owned by others. The corresponding percentages for colored farmers are 81.1 and 18.9. Of the colored farmers, 80.8 per cent are Indians, 16.9 per cent are Chinese, and 2.3 per cent are negroes. All except 14 of the Indian and negro farmers own all or a part of the farms they operate, while all but 3 of the Chinese operate farms owned by others. The greatest relative numbers of cash tenants are in the counties near the city of Portland and along the coast, where there are numerous fruit, vegetable, and dairy farms, which require such investments for labor and live stock as to make share tenancy inexpedient. There are relatively more cash tenants among colored farmers than among white farmers.

No previous census has reported the number of farms operated by "part owners," "owners and tenants," and "managers," but it is believed that the number conducted by the last-named class is constantly increasing.

FARMS CLASSIFIED BY RACE OF FARMER AND BY TENURE.

Tables 6 and 7 present the principal statistics for farms classified by race of farmer and by tenure.

TABLE 6.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER AND BY TENURE, WITH PERCENTAGES.

RACE OF FARMER, AND TENURE.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	35,837	281.0	10,071,328	100.0	$172,761,287	100.0
White farmers	35,286	279.6	9,864,481	98.0	171,531,997	99.3
Negro farmers	14	179.3	2,510	(2)	38,417	(2)
Indian farmers	443	455.6	201,826	2.0	962,655	0.6
Chinese farmers[1]	94	26.7	2,511	(2)	228,218	0.1
Owners	24,385	214.9	5,239,331	52.0	97,358,839	56.4
Part owners	4,251	485.6	2,064,302	20.5	29,017,464	16.8
Owners and tenants	327	328.7	107,495	1.1	2,159,167	1.2
Managers	508	2,288.3	1,162,468	11.5	12,013,180	7.0
Cash tenants	2,637	201.3	530,817	5.3	12,670,729	7.3
Share tenants	3,729	259.3	966,885	9.6	19,541,908	11.3

[1] Including 2 Japanese.
[2] Less than one-tenth of 1 per cent.

TABLE 7.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY RACE OF FARMER AND BY TENURE.

RACE OF FARMER, AND TENURE.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$3,157	$536	$182	$946	$890	18.5
White farmers	3,181	541	183	956	898	18.5
Negro farmers	1,664	349	86	645	574	20.9
Indian farmers	1,522	145	97	409	199	9.2
Chinese farmers[1]	1,951	268	76	132	1,102	45.4
Owners	2,499	518	160	816	748	18.7
Part owners	4,629	677	281	1,239	1,357	19.9
Owners and tenants	4,596	785	264	958	1,122	17.0
Managers	13,990	417	398	8,843	4,025	17.0
Cash tenants	3,556	465	142	642	770	16.0
Share tenants	3,902	533	199	607	922	17.6

[1] Including 2 Japanese.

Colored farmers operate but 1.5 per cent of the farms in Oregon, and control 2.1 per cent of the total acreage and 0.7 per cent of the total value of farm property. The values of all forms of farm property are less for colored than for white farmers. The per cent of gross income for negro farmers, of whom there are but few in the state, is

somewhat higher than for white farmers, owing to the fact that the average area of their farms is small, and the cultivation consequently more intensive. Notwithstanding the large average size of their farms, the per cent for Indians is very low, owing to their very general neglect of agriculture; while the very high per cent for Chinese farms is due to the fact that many of these are intensively cultivated market gardens.

Farms operated by managers have the highest average value of all forms of farm property, except buildings, and for this item "owners and tenants" have the largest average. The gross income is also largest for managers, but the ratio which their gross income bears to the total value of farm property is smaller, owing to the high valuation of their farm property, than for some of the other groups. As the large average area and high average value of live stock for this group would indicate, many of the farms of managers are stock ranches.

FARMS CLASSIFIED BY AREA.

Tables 8 and 9 present the principal statistics for farms classified by area.

TABLE 8.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY AREA, WITH PERCENTAGES.

AREA.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	35,837	281.0	10,071,328	100.0	$172,761,287	100.0
Under 3 acres	404	2.3	933	(1)	1,738,914	1.0
3 to 9 acres	1,027	6.0	6,171	0.1	1,491,897	0.9
10 to 19 acres	1,640	13.8	22,695	0.2	2,831,786	1.6
20 to 49 acres	4,088	34.5	140,669	1.4	8,561,267	5.0
50 to 99 acres	4,673	75.1	350,734	3.5	12,709,702	7.4
100 to 174 acres	11,055	149.0	1,647,387	16.4	30,920,082	17.9
175 to 259 acres	3,402	213.4	725,858	7.2	17,076,446	9.9
260 to 499 acres	5,826	358.7	2,089,844	20.7	38,103,224	22.6
500 to 999 acres	2,440	679.4	1,657,634	16.5	25,631,017	14.8
1,000 acres and over	1,287	2,664.7	3,429,453	34.0	32,696,952	18.9

[1] Less than one-tenth of 1 per cent.

TABLE 9.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY AREA.

AREA.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$3,157	$536	$182	$946	$890	18.5
Under 3 acres	367	306	48	3,588	1,364	31.7
3 to 9 acres	818	458	58	124	306	21.0
10 to 19 acres	1,098	399	68	162	327	18.9
20 to 49 acres	1,358	403	84	252	411	19.6
50 to 99 acres	1,829	422	116	358	517	19.0
100 to 174 acres	1,821	347	124	505	514	18.4
175 to 259 acres	3,490	628	204	698	867	17.3
260 to 499 acres	4,579	702	260	1,171	1,151	17.2
500 to 999 acres	7,221	946	402	1,936	1,853	17.6
1,000 acres and over	15,502	1,525	683	7,696	5,087	20.0

The group of farms containing from 100 to 174 acres each comprises a larger number of farms than any other class, but the group "1,000 acres and over" constitutes a larger part of the total acreage.

With a few exceptions, the average values of all forms of farm property increase with the size of the farms. For the group of farms of less than 3 acres each, all values are comparatively high, as this class contains most of the florists' establishments of the state, and many market gardens, poultry farms, and city dairies. The high value of live stock for this group is due to the fact that it includes many ranges consisting of large areas of public domain, though the area actually owned or leased is less than 3 acres. The incomes from these industries are determined, not so much by the area of the land used, as by the amount of capital invested and the expenditures for labor and fertilizers.

The average gross incomes per acre for the various groups classified by area are as follows: Farms under 3 acres, $590.51; 3 to 9 acres, $50.85; 10 to 19 acres, $23.61; 20 to 49 acres, $11.93; 50 to 99 acres, $6.88; 100 to 174 acres, $3.45; 175 to 259 acres, $4.06; 260 to 499 acres, $3.21; 500 to 999 acres, $2.73; and 1,000 acres and over, $1.91. The average gross income per acre decreases generally as the farms increase in size.

FARMS CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

Tables 10 and 11 present the leading features of the statistics relating to farms classified by principal source of income. If the value of the hay and grain raised on any farm exceeds that of any other crop and constitutes at least 40 per cent of the total value of products not fed to live stock, the farm is classified as a "hay and grain" farm. Similarly if vegetables are the leading crop, constituting 40 per cent of these products, it is a "vegetable" farm. The farms of the other groups are classified in accordance with the same general principle. "Miscellaneous" farms are those whose operators do not derive their principal income from any one class of farm products. Farms with no income in 1899 are classified according to the agricultural operations upon other farms in the same locality.

TABLE 10.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME, WITH PERCENTAGES.

PRINCIPAL SOURCE OF INCOME.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	35,837	281.0	10,071,328	100.0	$172,761,287	100.0
Hay and grain	9,712	323.0	3,137,205	31.2	61,892,811	35.8
Vegetables	1,676	97.2	162,849	1.6	5,011,107	2.9
Fruits	1,072	111.1	119,068	1.2	4,863,662	2.8
Live stock	10,218	454.6	4,644,659	46.1	59,627,943	34.5
Dairy produce	3,751	176.2	660,991	6.6	14,176,453	8.2
Sugar	11	279.1	3,070	(1)	125,507	0.1
Flowers and plants	38	2.5	94	(1)	199,230	0.1
Nursery products	33	56.0	1,847	(1)	220,870	0.2
Miscellaneous	9,326	143.8	1,341,545	13.3	26,643,704	15.4

[1] Less than one-tenth of 1 per cent.

TABLE 11.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

PRINCIPAL SOURCE OF INCOME.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$3,157	$536	$182	$946	$890	18.5
Hay and grain	4,793	647	277	656	1,041	16.3
Vegetables	2,163	437	107	283	632	21.1
Fruits	3,350	729	145	313	884	19.5
Live stock	3,057	552	182	2,045	1,201	20.6
Dairy produce	2,462	503	138	676	589	15.6
Sugar	9,643	566	443	758	2,893	25.4
Flowers and plants	3,208	1,889	123	23	2,387	45.5
Nursery products	4,958	1,373	218	144	4,618	69.0
Miscellaneous	1,985	403	116	353	538	18.8

For the several classes of farms the average values per acre of products not fed to live stock are as follows: Farms whose operators derive their principal income from flowers and plants, $965.00; nursery products, $82.51; sugar, $10.36; fruits, $7.96; vegetables, $6.50; miscellaneous, $3.74; dairy produce, $3.34; hay and grain, $3.22; and live stock, $2.64.

The wide variations shown in the averages and percentages of gross income are due largely to the fact that, in computing gross income, no deduction is made for expenditures. For florists' establishments, nurseries, and market gardens the average expenditure for such items as labor and fertilizers represents a far larger percentage of the gross income than for "hay and grain," "live-stock," or "miscellaneous" farms. Were it possible to present the average net incomes, the variations shown would be comparatively slight.

FARMS CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

Tables 12 and 13 present data relating to farms classified by the reported value of products not fed to live stock.

TABLE 12.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK, WITH PERCENTAGES.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	35,837	281.0	10,071,328	100.0	$172,761,287	100.0
$0	969	241.9	234,371	2.3	1,809,230	1.0
$1 to $49	1,012	143.3	144,984	1.4	1,186,300	0.7
$50 to $99	1,657	127.4	211,054	2.1	2,137,660	1.2
$100 to $249	6,337	116.3	736,683	7.3	10,453,277	6.1
$250 to $499	8,360	146.7	1,226,518	12.2	21,378,150	12.4
$500 to $999	8,625	212.0	1,828,218	18.2	36,510,568	21.1
$1,000 to $2,499	6,665	370.1	2,466,415	24.5	51,967,161	30.1
$2,500 and over	2,212	1,457.1	3,223,075	32.0	47,318,941	27.4

TABLE 13.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$3,157	$536	$182	$946	$890	18.5
$0	1,269	129	49	420		
$1 to $49	793	170	44	165	29	2.5
$50 to $99	852	204	49	185	69	5.4
$100 to $249	1,052	279	67	252	167	10.1
$250 to $499	1,657	387	109	401	357	14.0
$500 to $999	2,861	557	179	636	700	16.5
$1,000 to $2,499	5,373	867	312	1,245	1,459	18.7
$2,500 and over	12,968	1,348	621	6,455	5,402	25.3

There were 969 farmers reporting no income in 1899. Most of these farms were homesteads taken up too late for cultivation in 1899. Some are suburban or summer homes, and others had changed owners or tenants, and the persons in charge, June 1, 1900, were unable to give definite information concerning the products of the

preceding year. To this extent the reports fall short of giving a complete statement of farm income in 1899.

LIVE STOCK.

At the request of the various live-stock associations of the country, a new classification of domestic animals was adopted for the census of 1900. The age grouping for neat cattle was determined by their present and prospective relations to the dairy industry and the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep by age and sex. The new classification permits a very close comparison with previous census reports.

Table 14 presents a summary of live-stock statistics.

TABLE 14.—DOMESTIC ANIMALS, FOWLS, AND BEES ON FARMS AND RANGES, JUNE 1, 1900, WITH TOTAL AND AVERAGE VALUES, AND NUMBER OF DOMESTIC ANIMALS NOT ON FARMS OR RANGES.

LIVE STOCK.	Age in years.	ON FARMS AND RANGES.			NOT ON FARMS OR RANGES.
		Number.	Value.	Average value.	Number.
Calves	Under 1	168,323	$1,536,478	$9.13	3,120
Steers	1 and under 2	68,754	1,253,752	18.24	591
Steers	2 and under 3	43,928	1,142,145	26.00	148
Steers	3 and over	21,448	725,205	33.81	244
Bulls	1 and over	13,675	474,777	34.72	124
Heifers	1 and under 2	78,628	1,380,105	17.55	689
Cows kept for milk	2 and over	122,447	4,093,333	33.43	10,222
Cows and heifers not kept for milk.	2 and over	183,100	4,559,107	24.90	163
Colts	Under 1	26,138	267,521	10.23	286
Horses	1 and under 2	27,682	480,133	17.34	212
Horses	2 and over	234,112	7,903,406	33.76	19,529
Mule colts	Under 1	1,091	20,882	19.14	6
Mules	1 and under 2	1,014	30,013	29.60	7
Mules	2 and over	5,341	267,354	50.06	497
Asses and burros	All ages	305	42,423	139.09	45
Lambs	Under 1	1,078,936	1,919,620	1.78	623
Sheep (ewes)	1 and over	1,480,282	4,188,763	2.83	890
Sheep (rams and wethers).	1 and over	481,073	1,455,064	3.02	963
Swine	All ages	281,406	1,057,037	3.76	5,135
Goats	All ages	109,661	375,229	3.42	334
Fowls:[1]					
Chickens[2]		1,290,818	582,524		
Turkeys		36,031			
Geese		26,580			
Ducks		19,774			
Bees (swarms of)		55,585	160,382	2.89	
Unclassified			1,800		
Value of all live stock			$33,917,048		

[1] The number reported is of fowls over 3 months old. The value is of all, old and young.
[2] Including Guinea fowls.

The total value of all live stock on farms and ranges, June 1, 1900, was $33,917,048, of which 32.6 per cent represents the value of neat cattle other than dairy cows; 25.5 per cent, that of horses; 22.3 per cent, that of sheep; 12.1 per cent, that of dairy cows; 3.1 per cent, that of swine; and 4.4 per cent, that of all other live stock.

No reports were secured of the value of live stock not on farms or ranges, but it is probable that such animals have higher average values than farm or range animals. Allowing the same averages, however, the total value of all domestic animals not on farms or ranges, June 1, 1900, would be $1,137,758. Exclusive of poultry and bees not on farms, the total value of all live stock in the state is approximately $35,054,800.

CHANGES IN LIVE STOCK ON FARMS AND RANGES.

The following table shows the changes since 1850 in the numbers of the most important domestic animals.

TABLE 15.—NUMBER OF SPECIFIED DOMESTIC ANIMALS ON FARMS AND RANGES: 1850 TO 1900.

YEAR.	Dairy cows.	Other neat cattle.	Horses.	Mules and asses.	Sheep.[1]	Swine.
1900	122,447	577,856	287,932	7,751	1,961,355	281,406
1890	114,156	406,492	224,962	4,946	1,780,312	208,259
1880	59,549	356,693	124,107	2,804	1,083,162	156,222
1870	48,325	71,872	51,702	2,581	318,123	119,455
1860	53,170	100,961	36,772	980	86,052	81,615
1850	9,427	32,302	8,046	420	15,382	80,285

[1] Lambs not included.

The above table shows uninterrupted progress in the live-stock industry for the last half century. The number of dairy cows, June 1, 1900, was almost thirteen times as great as in 1850, and 7.3 per cent greater than in 1890. In the census of 1900, the term "dairy cows" was limited to those "kept for milk" at the time of the enumeration, while many cows milked at some time during the year were probably classed with "other neat cattle." The great increase in dairy products confirms this statement. Nearly eighteen times as many neat cattle, other than dairy cows, were reported in 1900 as in 1850, the gain in the last decade being 42.2 per cent. The number of "other neat cattle" in 1900 included 168,323 calves, however, and, as it is uncertain whether any calves were reported under this head in 1890, the increase shown for the last decade may be only apparent. The gains since 1890 in the numbers of other domestic animals are as follows: Horses, 28.0 per cent; mules and asses, 56.7 per cent; swine, 35.1 per cent; and sheep, 10.2 per cent. The increase in the number of sheep has not been as great in the last ten years as in the three former decades, owing to foreign competition in wool production, and fluctuations in prices, which, together with the increasing value of land, have caused many farmers to abandon sheep raising for other agricultural industries.

In comparing the poultry report of 1900 with that of the Eleventh Census, it should be borne in mind that in 1900 the enumerators were instructed not to report fowls under three months old, while in 1890 no such limitation was made. This fact explains to a great extent the apparent decrease in the numbers of turkeys and ducks and the small increase in the numbers of geese and chickens. Compared with the figures for 1890, the present census shows that geese increased in number 24.3 per cent and chickens, 9.3 per cent; while ducks decreased 38.8 per cent, and turkeys 17.3 per cent.

ANIMAL PRODUCTS.

Table 16 is a summarized statement of the products of the animal industry.

TABLE 16.—QUANTITIES AND VALUES OF SPECIFIED ANIMAL PRODUCTS, AND VALUES OF POULTRY RAISED, ANIMALS SOLD, AND ANIMALS SLAUGHTERED ON FARMS AND RANGES IN 1899.

PRODUCTS.	Unit of measure.	Quantity.	Value.
Wool	Pounds	18,349,660	$2,396,741
Mohair and goat hair	Pounds	267,780	74,368
Milk	Gallons	[1]48,582,968	[2]3,550,953
Butter	Pounds	8,107,460	
Cheese	Pounds	467,256	
Eggs	Dozens	7,709,970	1,162,071
Poultry			826,687
Honey	Pounds	979,140	109,247
Wax	Pounds	16,740	
Animals sold			6,598,325
Animals slaughtered			1,565,895
Total			16,284,282

[1] Includes all milk produced, whether sold, consumed, or made into butter or cheese.
[2] Includes the value of milk sold or consumed, and of butter and cheese made.

The value of animal products in 1899 was $16,284,282, or 42.8 per cent of all farm products, and 51.1 per cent of the gross farm income. Of the total value given, 50.1 per cent represents the value of animals sold and animals slaughtered on farms; 21.8 per cent, that of dairy products; 15.2 per cent, that of wool, mohair, and goat hair; 12.2 per cent, that of poultry and eggs; and 0.7 per cent, that of honey and wax.

ANIMALS SOLD AND ANIMALS SLAUGHTERED ON FARMS.

The value of animals sold and animals slaughtered on farms is $8,164,220, or 25.6 per cent of the gross farm income. Of the total number of farmers reporting live stock, 21,523, or 63.0 per cent, report animals slaughtered on farms, the average value per farm being $72.75; while 19,379, or 56.7 per cent of the total number, report sales of live animals, with an average receipt per farm of $340.49. In obtaining reports of receipts from sales of live animals, the enumerators were instructed to secure from each operator a statement of the amount received from sales in 1899 less the amount paid for animals purchased during the same year.

DAIRY PRODUCE.

The dairy industry has made great progress in the last decade, the production of milk showing an increase of 23,540,692 gallons, or 94.0 per cent; while the quantity of butter made on farms increased 69.4 per cent, and that of cheese, 75.9 per cent.

Of the $3,550,953 given in Table 16 as the value of dairy produce, $2,006,399, or 56.5 per cent, represents the amount received from the sale of dairy produce, and $1,544,554, or 43.5 per cent, the value of such produce consumed on farms. Of the former amount, $1,111,073 was received from the sale of 10,308,119 gallons of milk; $777,989, from 4,092,642 pounds of butter; $73,439, from 154,549 gallons of cream; and $43,898, from 397,967 pounds of cheese.

POULTRY AND EGGS.

The total value of the products of the poultry industry in 1899 was $1,988,758, of which 58.4 per cent represents the value of eggs produced, and 41.6 per cent, that of poultry raised. Over three million dozens more eggs were produced in 1899 than ten years before, the per cent of increase being 73.1.

WOOL.

The production of wool has increased rapidly since 1850, the gain in the last decade being 83.8 per cent. Malheur, Morrow, Baker, Lake, and Crook counties show the greatest increase. The average weight of fleeces increased from 6.3 pounds in 1890 to 8.6 pounds in 1900, showing a marked improvment in the grade of sheep kept.

HONEY AND WAX.

The quantity of honey produced in 1899 was 979,140 pounds, a gain of 544,112 pounds, or 125.1 per cent over the production of 1889. The quantity of wax reported for 1899 was 16,740 pounds, which was more than twice that of ten years before.

HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS.

Table 17 presents, for the leading groups of farms, the number of farms reporting horses and dairy cows, the total number of these animals, and the average number per farm. In computing the averages presented, only those farms which report the kind of stock under consideration are included.

TABLE 17.—HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS AND RANGES, JUNE 1, 1900.

CLASSES.	HORSES.			DAIRY COWS.		
	Farms reporting.	Number.	Average per farm.	Farms reporting.	Number.	Average per farm.
Total	31,759	287,932	9.1	29,414	122,447	4.2
White farmers	31,268	280,269	9.0	29,200	121,945	4.2
Colored farmers	491	7,663	15.6	214	502	2.3
Owners [1]	25,621	222,609	8.7	23,882	97,263	4.1
Managers	441	28,043	63.6	373	2,365	6.3
Cash tenants	2,801	13,653	5.9	2,062	11,712	5.7
Share tenants	3,396	23,627	7.0	3,097	11,107	3.6
Under 20 acres	2,046	7,193	3.5	2,012	3,956	2.0
20 to 99 acres	7,488	23,779	3.2	7,206	19,609	2.7
100 to 174 acres	9,766	64,453	6.6	8,681	32,024	3.7
175 to 259 acres	3,204	20,309	6.3	3,029	13,826	4.6
260 acres and over	9,305	172,198	18.5	8,488	53,032	6.3
Hay and grain	8,709	75,284	8.6	7,512	24,448	3.5
Vegetable	1,351	4,926	3.6	1,104	2,949	2.7
Fruit	862	3,923	4.6	708	1,583	2.2
Live stock	9,565	153,696	16.1	8,783	40,941	4.7
Dairy	3,293	18,876	5.7	3,751	30,068	8.0
Miscellaneous [2]	7,979	31,227	3.9	7,556	22,463	3.0

[1] Including "part owners" and "owners and tenants."
[2] Including sugar farms, florists' establishments, and nurseries.

CROPS.

The following table gives the statistics of the principal crops grown in 1899.

TABLE 18.—ACREAGES, QUANTITIES, AND VALUES OF THE PRINCIPAL FARM CROPS IN 1899.

CROPS.	Acres.	Unit of measure.	Quantity.	Value.
Corn	16,992	Bushels	359,523	$155,693
Wheat	873,379	Bushels	14,508,636	6,358,395
Oats	261,406	Bushels	6,725,828	2,078,950
Barley	60,375	Bushels	1,515,150	606,945
Rye	10,090	Bushels	109,234	67,053
Buckwheat	402	Bushels	7,010	4,425
Flaxseed	2,016	Bushels	8,740	8,564
Kafir corn	4	Bushels	134	39
Clover seed		Bushels	1,948	9,856
Grass seed		Bushels	24,437	11,604
Hay and forage	731,823	Tons	1,117,886	6,147,018
Tobacco	14	Pounds	4,630	769
Hops	15,434	Pounds	14,675,577	937,513
Peanuts	1	Bushels	25	18
Dry beans	841	Bushels	11,077	20,567
Dry pease	1,304	Bushels	22,615	21,114
Potatoes	30,035	Bushels	3,761,367	1,210,034
Sweet potatoes	27	Bushels	2,825	1,903
Onions	851	Bushels	208,502	167,175
Miscellaneous vegetables	15,494	Bushels		907,293
Sorghum sirup		Gallons	2,473	1,150
Sugar beets	2,510	Tons	14,462	63,322
Sorghum cane	39	Tons	11	43
Small fruits	3,470			386,632
Grapes	[1] 1,033	Centals	53,891	[2] 162,543
Orchard fruits	[1] 67,757	Bushels		[3] 906,015
Tropical fruits				11
Nuts				2,560
Forest products				1,300,724
Flowers and plants	58			95,872
Seeds	45			10,448
Nursery products	1,014			151,498
Miscellaneous	278			10,941
Total	2,096,692			21,806,687

[1] Estimated from number of vines or trees.
[2] Including value of raisins, wine, etc.
[3] Including value of cider, vinegar, etc.

Of the total value of crops, cereals, including Kafir corn, contributed 42.5 per cent; hay and forage, 28.2 per cent; vegetables, including potatoes, sweet potatoes, and onions, 10.5 per cent; fruits and nuts, 6.7 per cent; and all other crops, 12.1 per cent.

The average values per acre of the various crops were as follows: Flowers and plants, $1,653; miscellaneous seeds, $232; onions, $196; grapes, $157; nursery products, $149; small fruits, $111; sweet potatoes, $70; hops, $61; miscellaneous vegetables, $59; potatoes, $40; sugar beets, $25; orchard fruits, $13; and cereals, $8.

CEREALS.

Table 19 is a statement of the changes in cereal production since 1849.

TABLE 19.—ACREAGE AND PRODUCTION OF CEREALS: 1849 TO 1899.

PART 1.—ACREAGE.

YEAR.[1]	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	60,375	402	16,992	261,406	10,090	873,379
1889	37,722	250	12,101	218,736	6,845	553,052
1879	29,311	372	5,646	151,624	841	445,077

[1] No statistics of acreage were secured prior to 1879.

PART 2.—BUSHELS PRODUCED.

1899	1,515,150	7,010	359,523	6,725,828	109,234	14,508,636
1889	874,358	2,678	238,203	5,948,594	63,206	9,296,784
1879	920,977	6,215	126,862	4,385,650	13,305	7,480,010
1869	210,736	1,645	72,138	2,029,909	3,890	2,340,746
1859	26,254	2,749	76,122	885,673	2,704	826,776
1849			2,918	61,214	106	211,943

The total area devoted to cereals in 1879 was 632,871 acres; in 1889, 828,706 acres; and in 1899, 1,222,644 acres. The increases in the acreages devoted to the several cereals in the last decade were: Wheat, 57.9 per cent; oats, 19.5 per cent; buckwheat, 60.8 per cent; barley, 60.1 per cent; rye, 47.4 per cent; and corn, 40.4 per cent. The total number of bushels of all cereals grown in 1849 was 276,181, and in 1899, 28,225,381.

Of the total area under cereals in 1899, 71.4 per cent was devoted to wheat; 21.4 per cent, to oats; 4.9 per cent, to barley; 1.4 per cent, to corn; and 0.9 per cent, to rye and buckwheat.

A comparison by counties shows that the acreage of wheat in the Willamette Valley was less in 1899 than in 1879, though larger than in 1889, while the northeastern counties, which in 1879 reported only about one-tenth of the total acreage, reported in 1899 nearly one-half of the total for the state. In 1900 Umatilla county reported 20.9 per cent of the total area in wheat, with a yield of over 3,000,000 bushels. Sherman, Linn, and Marion counties follow, in the order named. The Willamette Valley counties grew over three-fourths of the oats reported in 1899, Marion reporting 15.7 per cent of the total area, and Linn, 15.1 per cent. The acreage devoted to this crop in the eastern counties was small. Barley was grown most extensively in the northeastern counties. Corn was reported in largest quantities in Jackson and Douglas counties, though grown generally throughout the state. Buckwheat received but little attention.

HAY AND FORAGE.

In 1900, 29,273 farmers, or 81.7 per cent of the total number in the state, reported hay and forage crops, with a total acreage for 1899 of 731,823 acres, or 56.7 per cent more than ten years before. Of this acreage 33.6 per cent produced grains cut green for hay. Exclusive of cornstalks and corn strippings the average yield of hay and forage per acre was 1.5 tons.

In 1899 the acreage and yield of the various kinds of hay and forage were as follows: *Wild, salt, and prairie* grasses, 202,680 acres and 234,220 tons; millet and Hungarian grasses, 598 acres and 970 tons; alfalfa or lucern, 53,612 acres and 145,875 tons; clover, 31,885 acres and 70,341 tons; other tame and cultivated grasses, 189,183 acres and 323,734 tons; grains cut green for hay, 245,759 acres and 320,735 tons; crops grown for forage, 8,106 acres and 21,525 tons; and cornstalks, 545 acres and 486 tons.

In Table 18 the production of cornstalks and corn strippings is included under "hay and forage," but the acreage is included under "corn," as the forage secured was an incidental product of the corn crop.

ORCHARD FRUITS.

The changes in orchard fruits since 1890 are shown in the following table.

TABLE 20.—ORCHARD TREES AND FRUITS: 1890 AND 1900.

FRUITS.	NUMBER OF TREES.		BUSHELS OF FRUIT.	
	1900.	1890.	1899.	1889.
Apples	2,825,898	1,268,395	873,980	1,038,492
Apricots	10,869	856	1,665	633
Cherries	237,155	51,277	65,347	42,127
Peaches	281,716	115,244	101,190	69,934
Pears	374,165	74,816	112,225	106,383
Plums and prunes	2,517,523	247,305	359,821	199,700

The fruit-growing industry is most extensive in the region lying between the Cascade and Coast ranges. The value of orchard products in 1899 was $906,015, of which amount Jackson and Douglas counties contributed more than one-third.

Since 1890 the total number of orchard trees in the state has increased from 1,757,893 to 6,314,232. Of this increase the gain in plum and prune trees constitutes 49.8 per cent, and that in apple trees, 34.2 per cent.

During the decade the number of apple trees has more than doubled, but their percentage of the total number of orchard trees in the state has decreased from 72.2 to 44.8 per cent. Linn, Clackamas, Marion, and Douglas counties together reported over one million apple trees.

The number of plum and prune trees reported in 1900 was more than ten times that of 1890. Over half of these trees were grown in Marion, Douglas, Yamhill, and Clackamas counties.

During the decade, peach trees more than doubled in number, and the numbers of pear and cherry trees reported by the present census are nearly five times as great as in 1890. Apricots show large gains, but are of little relative importance.

In addition to the number of trees shown in Table 20, unclassified orchard trees to the number of 66,906 were reported, with a yield of 7,774 bushels of fruit. The value of orchard products given above includes the value of 2,060 barrels of cider, 1,170 barrels of vinegar, and 2,818,200 pounds of dried and evaporated fruits.

The quantity of fruit produced in any year is determined largely by the nature of the season. Consequently, comparisons between the crop of 1889 and that of 1899 have little significance, as the crop of the latter year was severely injured by frosts.

SMALL FRUITS.

The total area used in the cultivation of small fruits in 1899 was 3,470 acres, distributed among 11,335 farms. The value of the fruit grown was $386,632, an average of $34 per farm. Of the total area, 1,792 acres were devoted to strawberries, whose total production was 3,837,820 quarts, grown principally in Multnomah and Wasco counties. The acreages and productions of the other berries were as follows: Blackberries and dewberries, 717 acres and 1,310,920 quarts; raspberries and Logan berries, 479 acres and 783,060 quarts; gooseberries, 203 acres and 326,780 quarts; currants, 169 acres and 238,420 quarts; and other berries, 110 acres and 148,534 quarts.

VEGETABLES.

The value of all vegetables grown in the state in 1899, including potatoes, sweet potatoes, and onions, was $2,286,405. Of this amount $1,210,034, or 52.9 per cent, represents the value of potatoes, which were reported by 22,717 farmers, or 63.4 per cent of the total number in the state. Aside from the land devoted to potatoes and onions, 15,494 acres were used in the growing of miscellaneous vegetables. Of this area the products of 11,596 acres were not reported in detail. Of the remaining area, 924 acres were devoted to the cultivation of cabbages; 601, to sweet corn; 573, to carrots; 372, to turnips; 331, to watermelons; 308, to tomatoes; 228, to beets; 110, to cucumbers; 101, to squashes; and 350, to other vegetables.

HOPS.

In 1850, 8 pounds of hops were reported for Oregon; in 1860, 493 pounds; and in 1870, 9,745 pounds. In 1880, 244,371 pounds were reported from 304 acres; in 1890, 3,613,726 pounds from 3,130 acres; and in 1900, 14,675,577 pounds from 15,434 acres—the product being over four times, and the acreage almost five times, as great as in 1890.

In 1900, 1,096 farmers reported hops with an average area of 14.1 acres per farm, and an average yield per acre of 951 pounds. The crop was valued at $937,513, an average of $855 per farm, $61 per acre, and $0.06 per pound. The small average yield and low price are largely due to late rains which caused a deterioration in the quality of the crop.

The counties of the Willamette Valley lead in the production of hops, Marion, Polk, and Yamhill counties, ranking in the order named, reporting 68.7 per cent of the total acreage.

SUGAR BEETS.

Only three counties in Oregon report sugar beets, but the industry, although of recent inception, bids fair to become one of importance in the state. In 1899, 63 farmers devoted to this crop an area of 2,510 acres, an average of 39.8 acres per farm, obtaining a total yield of 14,462 tons of beets, an average of 5.8 tons per acre. The value of this crop was $63,322, an average of $1,005 per farm, $25.23 per acre, and $4.38 per ton.

These beets were grown in the northeastern part of the state, Union county alone reporting 99.5 per cent of the total acreage.

FLORICULTURE.

The area devoted to the cultivation of flowers and ornamental plants in 1899 was 58 acres, and the value of the products sold therefrom was $95,872. These flowers and plants were grown by 62 farmers and florists, of whom 38 made commercial floriculture their principal business. They had invested in the aggregate $199,230, of which $121,900 represents the value of the land and improvements other than buildings; $71,800 that of buildings; $4,675 that of implements and machinery; and $855 that of live stock. The value of their products in 1899 was

$90,850, of which $88,940 represents the value of flowers and plants; $140 the value of products fed to live stock; and $1,770 the value of other products. The expenditure for labor was $16,175, and for fertilizers, $1,525. The average gross income per farm was $2,387.

In addition to the 38 principal florists' establishments, 112 farms and market gardens made use of glass in the propagation of flowers, plants, or vegetables. They had an area under glass of 100,185 square feet, making, with the 216,255 square feet belonging to the florists' establishments, a total of 316,440 square feet.

NURSERIES.

The total value of nursery stock sold in 1899 was $151,498, reported by the operators of 74 farms and nurseries. Of this number, 33 derived their principal income from the nursery business. They had 1,847 acres of land, valued at $163,600; buildings worth $45,300; implements and machinery, $7,200; and live stock, $4,770. Their total income was $154,530, of which $145,174 represents the value of nursery stock; $2,140, the value of products fed to live stock; and $7,216, the value of other products. The average gross income for each farm reporting was $4,618. They expended for labor $35,260, and for fertilizers, $1,085.

LABOR AND FERTILIZERS.

The total expenditure for labor on farms in 1899, including the value of board furnished, was $4,842,834, an average of $135 per farm. The average was highest for the most intensively cultivated farms, being $1,008 for nurseries, $805 for sugar farms, $426 for florists' establishments, $169 for live-stock farms, $166 for hay and grain farms, $146 for fruit farms, $103 for vegetable farms, and $71 for dairy farms. "Managers" expended on an average, $1,065; "share tenants," $133; "cash tenants," $109; and "owners," $101. White farmers expended $136 per farm, and colored farmers, $96.

Fertilizers purchased in 1899 cost $27,395, or less than $1 per farm, but an increase since 1890 of 104.9 per cent. The average expenditure was $40 for florists' establishments, $33 for nurseries, $3 for vegetable farms, $2 for fruit and sugar farms, and $1 for hay and grain and dairy farms.

INDIAN RESERVATIONS.

Oregon, as well as the two other Pacific Coast states, has presented a splendid field for the ethnologist. In that state, there exist the remnants of a large number of Indian tribes, most of which are aboriginal to this region, representing more than ten distinct linguistic stocks. They have been collected largely upon five reservations, namely, Grande Ronde, Klamath, Siletz, Umatilla, and Warm Springs, while some still live along or near the Columbia River and depend upon fish and game for their support.

GRANDE RONDE RESERVATION.

Grande Ronde reservation is situated in the northwestern part of Oregon, in Polk and Yamhill counties, and contains an area of 93¼ square miles. Approximately 10,000 acres are arable, being a fair quality of land lying in the small valleys along the tributaries of the Yamhill River.

The Indians at Grande Ronde represent the remnants of 9 small tribes: The Clackamas, Cow Creek, Lakmiut, Marys River, Rogue River, Santiam, Umpqua, Wapete, and Yam Hill, numbering in all 402. The larger number cultivate their own allotments and those of the infirm members of their families. Oats and wheat are their principal crops, and small areas seeded to these cereals were also cut green for hay. A number cultivated vegetable gardens and patches of small fruits, while orchards of apple, pear, plum, and other fruit trees are very common. The majority of the 97 Indian farmers had from 10 to 80 acres under cultivation in the census year, and a few had as high as 150 acres.

Stock raising is carried on only on a small scale in connection with their other farming operations. A few have a number of cattle and report small sales of live stock; they sell enough beef to supply the agency in addition to satisfying their own needs. Dairy cows, chickens, and swine have found a place on most farms, and one Indian farmer has a flock of sheep. The horses are largely of Indian pony stock and are used in connection with farm work.

KLAMATH RESERVATION.

Klamath reserve lies in the high plateau region of south central Oregon, east of the Cascade Mountains, in Klamath and Lake counties, and embraces an area of 1,650 square miles. This tract affords an excellent opportunity for stock raising; the fertile lowlands along lakes and rivers provide an abundance of hay and pasturage. A large marsh in the northern part of the reservation, covering approximately 90,000 acres, is also surrounded with excellent hay lands. Agriculture is very uncertain on account of the altitude, which averages over 4,000 feet. Early frosts often cut short the growing season.

The tribes here are the Klamath, Modoc, Paiute, and Pit River, with a total population of 1,136. The Klamath and Modoc, of Lutuamian stock, who constitute the larger part of the population, have so intermarried that they can no longer be distinguished and now form a single band. They are progressing in agricultural pursuits, and are giving more attention to their cattle than in former years.

In 1899 frost destroyed the growing crops of cereals at Klamath, and many acres of wheat, oats, and rye were cut green for hay. Most of the farmers cut large quantities of the wild grass, one Indian cutting as high as 600 acres. A few cultivated garden vegetables.

Surveys have been made for an irrigation system which will cover at least 50,000 acres of land; three miles of ditch have already been opened, and the result in the increased production on the allotments watered is very satisfactory.

The majority of the 201 Indian farmers possess range cattle, and some have large herds. Many reported small sales of live stock, while a few made sales of over $1,000 in 1899. The herds of cattle could well be augmented by disposing of the worthless Indian ponies and substituting marketable stock for them. Dairy cows are owned by a number of farmers, and chickens and swine are also quite common. The Klamath Indians lost considerable of their stock during the winter of 1898 and 1899, on account of a shortage in the hay crop of the previous season.

UMATILLA RESERVATION.

Umatilla reservation, comprising an area of 125 square miles, is situated in the northeastern part of Oregon, in Umatilla county. A large portion of this tract is well adapted to wheat raising; the remainder constitutes timber and grazing land. Three tribes are located here, the Cayuse, Umatilla, and Wallawalla, the total population of the reservation being 1,397.

Only 20 of the 65 farms on the reservation are operated by Indians, the others being leased to white men, or are the allotments of the Indian families of white men who have married Indian women. Wheat is the principal crop, but barley, corn, and oats are also grown. Grains cut green (usually oats) constitute their hay crop, although one Indian seeded 5 acres to alfalfa. Garden produce was not generally reported. The majority of the 20 Indian farmers cultivated from 50 to 100 acres, while one had 400 acres under cultivation.

A few Indians have made a small start in stock raising but have not, as yet, accumulated a sufficient number of cattle to realize any large profit. Several still work their farms with horses of pony stock, but others have purchased farm horses of a fair grade of American stock. Chickens, swine, and dairy cows have found a place on a number of Indian farms.

WARM SPRINGS RESERVATION.

Warm Springs reservation, so called from the springs along one of the streams flowing through the reservation, lies in Wasco and Crook counties in the north central part of the state, and has an area of 725 square miles. Most of the land is rough, mountainous, and of poor quality, but fairly well adapted to stock raising, the native grasses being nutritious and plentiful. There is sufficient agricultural land along the water courses to support the present population. The soil is rich and produces an abundance of grains, grasses, and vegetables.

The tribes at Warm Springs are the Des Chutes, John Day, Paiute, Tenino, Warm Springs, and Wasco, with a population of 837. Their farms are fairly well equipped with stock and implements, and a few may be said to be quite prosperous.

There are 37 farms on the reservation, all of which are operated by Indians, the majority having from 20 to 80 acres under cultivation. Their principal crops are wheat, oats, and hay, but several farmers also raised a small amount of barley. The season of 1899 was very favorable for agriculture at Warm Springs, and the acreage cultivated by the Indians was much greater than in any preceding year. The vegetable crop was not generally reported.

A number own range cattle and reported small sales of live stock, usually less than $200. One Indian farmer owns a large flock of sheep in addition to a number of range cattle, and his sales of live stock amounted to $3,145 in 1899. The total value of the fleeces shorn from his flock in that year was $1,250. All have too many Indian ponies and persist in raising them, when, by disposing of them and purchasing cattle, they could establish a profitable industry.

IRRIGATION STATISTICS.

The two sections, into which Oregon is divided by the Cascade range of mountains, are very dissimilar in climate, topography, and soil. In the western section the winters are not marked by prolonged periods of cold, nor the summers by long heated terms. There is a very heavy rainfall and irrigation is not used for general crops, but water is artificially applied in summer by a number of truck farms, and a few cases of irrigation of hay lands (resulting in an extra cutting) are reported from the southern part of this section.

The greater part of the eastern section is arid, or semi-arid, but the soil, as a rule, is very productive when there is sufficient moisture. There are numerous rivers of considerable size, and the available water supply of the section as a whole is large. In the counties bordering on the Columbia River, irrigation is not generally practiced, and, except in occasional years of small rainfall, it is unnecessary for most crops. A greater part of the territory south and west of these counties is useful, without irrigation, for grazing purposes only.

In the Rogue River Valley in Jackson and Josephine counties, hay is the only crop usually irrigated, but a number of systems have been started or projected for the purpose of supplying orchard lands with water.

The total number of irrigators in Oregon in 1900 was 4,636. The total area irrigated was 388,310 acres, of which 388,111 acres were irrigated from streams and 199 acres were irrigated from wells by the use of pumping plants. The following table shows, by counties, the general statistics of acreage and cost of irrigating systems for each of these methods.

TABLE A.—ACREAGES IRRIGATED FROM STREAMS AND WELLS IN 1899, WITH TOTAL COST OF CONSTRUCTION OF IRRIGATION SYSTEMS, AND THE AVERAGE COST PER ACRE.

COUNTIES.	IRRIGATION FROM STREAMS.			IRRIGATION FROM WELLS.		
	Acres irrigated.	Cost of construction of ditch systems.		Acres irrigated.	Cost of construction of pumping plants.	
		Total.	Average per acre irrigated in 1899.		Total.	Average per acre irrigated in 1899.
The State	388,111	$1,838,782	$4.74	199	$4,989	$25.07
Baker	46,674	206,299	4.42	80	1,972	24.65
Crook	13,921	111,090	7.98			
Gilliam	1,084	5,312	4.90	2	52	26.0
Grant	19,623	88,460	4.51	9	230	25.56
Harney	111,090	178,855	1.61			
Jackson	7,054	78,229	11.09			
Josephine	4,121	32,267	7.83			
Klamath	23,911	225,242	9.42			
Lake	51,995	135,187	2.60			
Malheur	49,283	507,122	10.29	12	313	26.08
Morrow	3,865	21,528	5.57			
Sherman	108	718	6.65	4	104	26.00
Umatilla	5,148	36,602	7.11	20	510	25.50
Union	26,727	80,716	3.02	8	209	26.13
Wallowa	14,016	52,980	3.78			
Wasco	3,341	46,072	13.79	1	30	30.00
Wheeler	4,973	23,721	4.77	25	614	24.56
All other counties	1,177	8,392	7.13	38	955	25.13

The irrigation systems of the state are generally inexpensive and are operated mostly by individual farmers for their own use. The low average cost of construction per acre irrigated for the state is largely due to the simple methods employed to irrigate large areas used for pasturage. There has been very little attempt to store winter water for summer use.

CHANGES SINCE 1889.

The reports on irrigation secured by the Eleventh Census contain data for only the principal irrigating counties, which are as follows: Baker, Crook, Grant, Gilliam, Harney, Jackson, Josephine, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler. Wheeler was formed from Crook, Gilliam, and Grant since the Eleventh Census was taken. The following table shows for these counties the changes between 1889 and 1899 in the number of irrigators and the acreages irrigated.

TABLE B.—NUMBER OF IRRIGATORS AND ACRES IRRIGATED IN PRINCIPAL IRRIGATING COUNTIES, IN 1889 AND 1899, WITH PERCENTAGES OF INCREASE.

COUNTIES.	NUMBER OF IRRIGATORS.			NUMBER OF ACRES IRRIGATED.		
	1899.	1889.	Per cent increase.	1899.	1889.	Per cent increase.
Total[1]	4,502	3,150	42.9	387,095	177,944	117.5
Baker	594	408	45.6	46,754	31,471	48.6
[2] Crook	212	245	17.9	13,921	8,618	[3] 39.7
[2] Gilliam	32	78		1,086	1,037	
[2] Grant	327	325		19,632	18,718	
[2] Wheeler	198			4,998		
Harney	228	240	[3] 5.3	111,090	26,289	322.6
Jackson	409	169	142.0	7,054	3,230	118.4
Josephine	235	144	63.2	4,121	2,598	58.6
Klamath	129	56	130.4	23,911	5,699	319.6
Lake	272	355	[3] 23.4	51,995	25,549	103.5
Malheur	479	329	45.6	49,295	22,037	123.7
Morrow	76	45	68.9	3,865	879	339.7
Sherman	12	8	50.0	112	142	[3] 21.1
Umatilla	329	148	122.3	5,168	3,571	44.7
Union	494	346	42.8	26,735	21,947	21.8
Wallowa	178	111	60.4	14,016	4,147	238.0
Wasco	303	143	111.9	3,342	2,012	66.1

[1] Includes only 17 principal irrigating counties. In all other counties there were 134 irrigators and an irrigated area of 1,215 acres.
[2] Wheeler county formed in 1899 from parts of Crook, Gilliam, and Grant counties.
[3] Decrease.

Substantial increases are shown for all counties, the only decreases reported being in Harney and Lake counties, where the number of irrigators was less in 1899 than in 1889. In these counties there were, notwithstanding these decreases, very great gains in the acreage irrigated.

IRRIGATED CROPS.

Of the total area irrigated in 1899, 290,256 acres were in crops and 98,054 acres were used for pasture only. The irrigated pasture was all reported from the 17 counties mentioned above, the irrigated land in other counties, amounting to 1,215 acres, being devoted exclusively to crops. The following table shows the total and irrigated acreages and production of all crops in the leading irrigating counties enumerated above, together with the per cent which the irrigated acreage bears to the total for each crop.

TABLE C.—ACRES AND PRODUCTION OF PRINCIPAL CROPS, TOTAL AND IRRIGATED, IN CHIEF IRRIGATING COUNTIES, WITH PERCENTAGES.

CROPS.	ACRES.			Unit of measure.	PRODUCTION.		
	Total.	Irrigated.	Per cent irrigated.		Total.	Irrigated.	Per cent irrigated.
Corn	9,628	626	6.5	Bushels	166,437	12,682	7.6
Wheat	491,258	16,092	3.3	Bushels	7,280,443	387,201	5.3
Oats	31,395	8,576	27.3	Bushels	835,350	290,805	34.8
Barley	51,231	8,877	17.3	Bushels	1,239,193	281,336	22.7
Rye	9,263	1,070	11.6	Bushels	96,268	17,466	18.1
Wild, salt, or prairie grasses	185,277	138,966	75.0	Tons	214,690	165,269	77.0
Millet and Hungarian grasses	366	258	70.5	Tons	446	432	96.9
Alfalfa or lucern	52,001	44,877	86.3	Tons	142,287	127,791	89.8
Clover	3,842	2,729	71.0	Tons	8,085	5,825	72.0
Other tame and cultivated grasses	64,554	35,175	54.5	Tons	98,332	57,915	58.9
Grains cut green for hay	182,573	18,806	10.3	Tons	219,173	34,703	15.8
Forage crops	3,493	1,214	34.8	Tons	4,563	1,630	35.7
Dry beans	419	224	53.5	Bushels	6,294	4,640	73.7
Dry peas	64	41	64.1	Bushels	1,368	1,075	78.6
Potatoes	7,071	1,872	26.5	Bushels	762,089	252,935	33.2
Onions	146	100	68.5	Bushels	24,570	18,790	76.5
Miscellaneous vegetables	4,305	1,654	38.4				
Small fruits	1,272	955	75.1				
Sugar beets	2,510	230	9.2	Tons	14,462	2,268	15.7
Grapes	554	99	17.9	Centals	21,755	2,979	13.7
Orchard fruits	16,472	5,312	32.2				
Hops	257	35	13.6	Pounds	279,750	38,250	13.7
Other crops	603	46	7.6				

The largest percentages are shown for the hay and forage crops, except grains cut green for hay for which the percentages are about the same as for the cereals. The percentages of production are larger than of acreage in nearly all cases as the production is generally larger on irrigated land.

Table D shows, by counties, the value of the crops grown on irrigated land in the state in 1899.

TABLE D.—VALUE OF CROPS PRODUCED ON IRRIGATED LAND, BY COUNTIES.

COUNTIES.	All crops.	Hay and forage.	Cereals.	Vegetables.	Orchard fruits.	Small fruits.	Other crops.	COUNTIES.	All crops.	Hay and forage.	Cereals.	Vegetables.	Orchard fruits.	Small fruits.	Other crops.
The State[1]	$2,926,606	$2,030,729	$438,812	$280,337	$91,971	$60,571	$24,186	Malheur	387,016	310,039	45,422	27,236	3,280	976	63
								Morrow	63,120	58,569	1,367	2,162	749	174	99
								Sherman	7,170	190		950	5,162	628	240
Baker	537,563	329,941	162,188	27,716	14,045	2,648	1,025	Umatilla	118,923	59,289	3,636	20,296	8,456	23,317	3,929
Crook	190,567	157,070	25,017	7,486	618	376		Union	303,859	174,883	64,821	34,344	11,191	7,814	10,856
Gilliam	22,270	11,189	2,889	2,366	6,295	16	15								
Grant	203,477	138,947	25,117	18,359	18,677	2,216	161	Wallowa	127,235	62,368	51,133	10,027	2,107	1,462	138
Harney	232,443	210,003	16,739	5,463		238		Wasco	59,542	25,114	803	18,714	4,370	9,834	707
								Wheeler	78,245	63,672	2,042	10,117	1,677	734	3
Jackson	132,390	91,326	7,198	18,291	8,358	6,209	1,008	All other counties	48,306	2,240		44,554		1,260	252
Josephine	81,698	46,588	2,814	19,838	4,724	2,044	5,690								
Klamath	123,491	101,859	18,025	2,904	603	100									
Lake	209,291	187,492	10,101	9,514	1,659	525									

[1] Exclusive of Indian reservations.

Of the total value of crops grown on irrigated land, 69.4 per cent represents the value of hay and forage; 15.0 per cent, the value of cereals; 9.6 per cent, that of vegetables; 3.1 per cent, that of orchard fruits; 2.1 per cent, that of small fruits; and 0.8 per cent, that of other crops. The total value of the crops grown on irrigated land constitutes 7.7 per cent of the total value of farm products for the state.